REMARKS

Claims 1-56 are pending. Claims 39-56 are rejected under 35 U.S.C. § 112, second paragraph. Claims 1-3, 6-8, 11, 13-14, 21-23, 26-28, 31, and 33-34 are rejected under 35 U.S.C. § 102(a). Claims 15-20, 35, and 37-38 are rejected under 35 U.S.C. § 103(a). Claims 4-5, 9-10, 12, 24-25, 29-30, and 32 are objected to as being dependent upon a rejected base claim. Claims 2, 17, and 37 are currently amended.

Claim 2 is objected to for an unclear preamble. Claim 2 is amended to overcome the objection.

Claims 39-56 are rejected under 35 U.S.C. § 112, second paragraph. In particular, independent claims 39 and 48 are rejected as being unclear for reciting "*K* different bit sequences." Claim 39 is directed to a method of producing a sequence of frames. Claim 48 is directed to a method of receiving a sequence of frames. Otherwise, limitations of claims 39 and 48 are similar. Only claim 39, therefore, is reproduced below with reference to Figure 8 and the instant specification. Claim 39 recites "A method of producing a sequence of frames (Figure 2, Frame I, Frame I+1, . . .), comprising the steps of: selecting a sequence of *K* different bit sequences (M_1, M_2, . . . M_K); inserting the sequence of *K* different bit sequences into a group of *K* sequential frames ($M_1 \rightarrow F_1$, $M_2 \rightarrow F_2$, . . . $M_K \rightarrow F_K$), of the sequence of frames; and repeating the step of inserting at each successive group of *K* sequential frames ($M_1 \rightarrow F_1$, $M_2 \rightarrow F_2$, . . . $M_K \rightarrow F_K$) of the sequence of frames." The method of producing the sequence of frames is described in detail at page 16, line 7 through page 18, line 28. In particular, midambles or bit sequences M_1, M_2, . . . M_K are selected for a cell as shown in Figure 8. A first midamble M_1 is inserted into a first frame F_1. (page 16, lines 17-19). Next, a second midamble M_2 is inserted into a second frame F_2. (page 16, lines 21-22). Finally, midamble M_K is inserted into frame F_K. (page 16, lines 22-25). After an initial cycle through all *K* midambles, the sequence of inserting midambles M_1-M_K into frames F_1-F_K is repeated. (page 16, line 26 through page 17, line 11). Applicants respectfully submit, therefore, that claims 39 and 48 and their respective depending claims are described in detail in the instant specification and shown

in the drawing figures. Thus, applicants further submit that claims 39-56 are patentable under 35 U.S.C. § 112, second paragraph.

Claims 1-3, 6-8, 11, 13-14, 21-23, 26-28, 31, and 33-34 are rejected under 35 U.S.C. § 102(a) as being anticipated by applicants' admitted prior art (AAPA). AAPA specifically disclose each midamble of the prior art "includes information that is unique to a given cell and is selected from a pre-defined set of 128 different possible bit sequences; thus, the unique sequence is assigned to the given cell and that information is encoded within the midamble of the data frames transmitted by stations within the corresponding cell." (page 2, lines 17-21). Thus, AAPA admits that a unique bit sequence or midamble was assigned to a given cell in the prior art.

By way of contrast, the claimed invention includes a plurality of bit sequences or midambles assigned to a cell. The instant specification recites "in the preferred embodiment, a transmitter does not transmit only a single assigned midamble corresponding to the cell in which it is located as is the case in the prior art. Instead, in the preferred embodiment a cell is assigned a sequence of K midambles, and then a transmitter communicating within that cell cycles through these midambles one at a time. In the preferred embodiment, the cycling is such that a different midamble is used for each successive frame transmitted by the transmitter until all midambles in the cycle have been transmitted." (page 17, lines 12-19).

By way of further explanation and referring to Figure 8, independent claim 1 recites "A wireless communication system (Figure 1), comprising: transmitter circuitry (BST1) comprising circuitry for transmitting a plurality of frames to a receiver (UST) in a first cell; wherein each of the plurality of frames (Figure 2) comprises a bit group (22 Figure 3); wherein the bit group uniquely distinguishes the first cell from a second cell adjacent the first cell (page 10, lines 16-17); wherein the transmitter circuitry (Figure 7) further comprises circuitry (54) for inserting a bit sequence into the bit group (Figure 7, page 15, lines 3-6); and *wherein the bit sequence is selected from a plurality of bit sequences* (M_1, M_2, . . . M_K, Figure 8, page 17, lines 14-16) *such that successive*

transmissions by the transmitter circuitry comprise a cycle of successive ones of the plurality of bit sequences (Figure 8, page 17, lines 17-17)." (emphasis added).

The present invention differs from the prior art in that successive frame to frame transmissions from a base station to a user station use different midambles as explained at page 17, lines 12-19 and in the state diagram of Figure 8. For example, a significant improvement may be realized by cycling through two or four different midambles on successive frames. (page 17, lines 24-27). In a particular embodiment of the present invention, these different midambles may correspond to respective system frame numbers. (page 17, line 29 through page 18, line 7). In view of this explanation, applicants respectfully submit that neither AAPA nor any of the cited references disclose "the bit sequence is selected from a plurality of bit sequences such that *successive transmissions by the transmitter circuitry comprise a cycle of successive ones of the plurality of bit sequences*" as required by claim 1. Thus, claim 1 and depending claims 2-3, 6-8, 11, and 13-14 are patentable over AAPA under 35 U.S.C. § 102(a).

Claims 21-36 recite "A method of operating a wireless communication system, comprising the steps of: transmitting a plurality of frames by transmitter circuitry to a receiver in a first cell; wherein each of the plurality of frames comprises a bit group; wherein the bit group uniquely distinguishes the first cell from a second cell adjacent the first cell; wherein the transmitting step comprises inserting a bit sequence into the bit group; and *wherein the bit sequence is selected from a plurality of bit sequences such that successive transmissions by the transmitter circuitry comprise a cycle of successive ones of the plurality of bit sequences.*" Applicants' admitted prior art fails to disclose that successive transmissions by the transmitter to a receiver comprise a cycle of bit sequences. Thus, claims 21-23, 26-28, 31, and 33-34 are patentable over applicants' admitted prior art under 35 U.S.C. § 102(a).

Claims 17-20 recite "A wireless communication system, comprising: receiver circuitry comprising *circuitry for receiving a plurality of frames from a transmitter in a first cell* . . . wherein the receiver circuitry further comprises *circuitry for identifying paths in the plurality of frames as*

actual paths in response to a comparison of path positions resulting from successive correlation measures between successive ones of the plurality of bit sequences in a cycle and the bit group in each of the plurality of frames." Claims 37-38 recite "A method of operating a wireless communication system, comprising the steps of: *receiving a plurality of frames from a transmitter in a first cell . . . identifying paths in the plurality of frames as actual paths in response to a comparison of path positions resulting from successive correlation measures between successive ones of the plurality of bit sequences in a cycle and the bit group in each of the plurality of frames.*" (emphasis added). Applicants' admitted prior art fails to disclose that such a comparison of path positions could be made in the plurality of frames by correlation between successive ones of the plurality of bit sequences. Such bit sequences of the prior art between a transmitter and receiver in a first cell were always the same. Applicants' admitted prior art combined with any of the cited references, therefore, fail to disclose all elements of the claimed invention as required for *prima facie* obviousness. Thus, claims 17-20 and 37-38 are patentable under 35 U.S.C. § 103(a).

Applicants acknowledge the rejection of depending claims 15-16 and 35-36 under 35 U.S.C. § 103(a). Applicants respectfully submit that these rejections are moot as claims 15-16 and 35-36 depend from respective patentable claims 1 and 21.

In view of the foregoing, applicants respectfully request reconsideration and allowance of claims 1-56. If the Examiner finds any issue that is unresolved, please call applicants' attorney by dialing the telephone number printed below.

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